



Open vs. minimally invasive cost of distal pancreatectomy

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Today, robotic system has become a new technological trend in surgery and its potential advantages such as excellent ergonomics, tremor elimination, 3-dimensional view and improved instruments movements have been well described. Even if in the literature there are only few studies addressing the benefits on distal pancreatectomies and none of them is a randomized clinical trial, it is clear that in this field, robotic approach is both feasible and safe as well as the laparoscopic and traditional open approach (1-4). On the other hand, there is a lack of high-level economic studies comparing these techniques.

Cost versus benefits for health care is an issue whenever a new technology is introduced to a hospital (5).

Given this background, in the current issue of the HPB, Fisher *et al.* examined the cost of pancreatic distal resection performed by open, robotic or laparoscopic approach.

This study gathers information from several hospitals throughout a national database which capture also readmissions costs and complications costs that may occur up to 90 days from the surgery. This latest aspect is very important as costs of a surgical technique may vary a lot during a longer period of time, especially regarding readmission rate, which in some studies have been showed to be lower in the minimally invasive approach compared with the traditional open technique.

As the authors state, this is the first cost analysis study that includes such higher number of patients. But, the group population does not seem to be similar. Particularly the number of 53 robotic distal pancreatectomies might be an adequate number for a single center, but divided for several centers it may be not. It is well known that the learning curve impacts on clinical results and therefore on final costs (3).

Thus, it would have been interesting to know how many centers have been included in this study.

Concerning clinical outcomes, as expected, no relevant differences among the groups have been found, except for length of stay, which was found to be longer in the open group.

This study showed that minimally invasive distal pancreatectomy is associated with 90-day cost savings, approximately 21–25% comparing to traditional open approach. As expected, laparoscopy resulted to be the less costly approach, with approximately 3,500\$ difference with the robotic and 8,000\$ with the open approach.

However, in the cost analysis, the initial purchase cost of the robotic system seems that has not been included. This value is very difficult to be calculated as depreciation and amortization cost per patient cannot be well defined for each hospital. Usually, the robotic system is utilized by several sub specialties in each center (urologists, gynaecologists, etc.) and it may be very interesting analyze how overall costs vary according to the total number of procedures performed in each hospital. I strongly believe that the amortization cost is faster and the cost of each procedure decreases by means of high number rate of surgeries performed.

In the current literature I can find only two studies comparing costs of robotic and laparoscopy in distal pancreatectomies (6,7). The first one is by Waters *et al.* published almost a decade ago [2010] showing that direct hospital costs are comparable between the groups (6). The other one was recently published by the Spanish center of Sanchinarro where I have been working with, reporting that robotic is financially comparable to laparoscopic distal pancreatectomy (7).

In this latest study we were able to investigate that robotic operative cost is higher compared with laparoscopy, but it seems to have been compensated given the decrease of its hospitalization costs (7). This data is lacking in the study of Fisher *et al.*

It is important to draw attention to the fact that we must see the cost evaluation of a new technology from a different point of view. Cost itself is a relatively poor data, unless a complete cost-effectiveness analysis is performed, including quality of life of the patients, benefit of ergonomics for the surgeons. This type of study is still lacking.

In conclusions, even if today we still cannot make strong conclusions, I must recognize the effort of the authors on performing this cost analysis study of different techniques of distal pancreatectomies, which serve to further back up the results of the few previous studies available in the literature and serve to stimulate further larger and randomized trials, which could bear clearer results.

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